FEDERAL AVIATION ADMINISTRATION
CIVIL AEROSPACE MEDICAL INSTITUTE
STATEMENT OF WORK
FOR
TECHNICAL RESEARCH SUPPORT SERVICES

Rev 12-17-2009

Table of Contents

1. Introduction

The Civil Aerospace Medical Institute's Aerospace Medical Research Division (AAM-600) is responsible for research into issues having a direct effect on aviation safety. Some of these areas of research involve aviation pathology and toxicology, physiology, protection and survival, and advanced computer modeling of these processes. This research results in reports and findings extremely valuable to various elements of the aviation industry. Frequently the research assesses the adequacy of aircraft interior designs and human factors engineering recommendations. The results of this research affect the design standards of cockpits, cabins, and other areas that may indicate a need for a change in safety design standards. The nature of the work to be accomplished under this contract is critical to aviation safety.

The results of technical investigations and analysis can result in significant improvements in cabin safety for the air transportation industry. Additionally, the work will involve establishing and evaluating criteria for determining compliance with these standards, and for certification of aircraft safety requirements. The critical nature of this work dictates that only a contract organization with broad aeromedical and applied aviation research experience, and highly qualified technical personnel who are current with state-of-the-art technology be utilized. The results of the research may be presented to stakeholders through conferences and colloquiums.

2. Scope of Work

The contractor shall provide support services to assist the research objectives of the FAA Aerospace Medical Division, and constituent research laboratories. Research projects may be conducted in any area of the aerospace medical program for projects such as aircraft cabin safety/ evacuation, aircraft cabin environment/physiology, biodynamics, vision, accident investigation, forensic toxicology, chemical/ biological protection/decontamination, civilian space vehicles, molecular biochemistry and mathematical modeling and simulation. The contract support may require services that assist in establishing and evaluating criteria for determining compliance with certification standards related to aircraft safety. The specific work requirements and qualifications will be ordered by fixed price task performance work statements issued prior to performance by the FAA Contracting Officer or delegated Contracting Officer's Technical Representative. The scope of work required by the contractor includes:

1) Providing research support personnel with similar education and work experience listed on the Contract Support Position Descriptions in Appendix A. These contract subject matter experts will work with federal government employees to support in-house research projects and programs. The unpredictability of our research topics requires the contractor to fill as many or as few positions as management deems necessary.

2) Providing event personnel to host and manage technical conferences and colloquiums. This may include obtaining guest lecturers and scientific subject matter experts. Hosting requirements cannot be projected and will be tasked as "over and above" if a need generates.

3) Conducting independent research initiatives by assembling a team of subject matter experts who can independently design, cost, develop, conduct, and publish scientific reports documenting the processes, outcomes, and results of their research.

3. Definitions

Aircraft Certification: The prescribed safety standards outlined under specific Federal Aviation Regulations, which must be met before the FAA issues a type certificate for new aircraft, engines, or propeller models.

Cabin Safety: The level of protection provided to occupants in an aircraft which include both cockpit and passenger areas for all conditions encountered in the operation of an aircraft including accidents.

Compatible: The quality of handling data and programs devised from one type of computer system to another.

Computer Security: The safeguarding of computing resources against unauthorized use, especially the protection of data from deliberate or accidental damage, unauthorized change, or disclosure of controlled or Privacy Act material.

Contracting Officer (CO): The FAA employee responsible for government contracting activity relating to this contract.

Contracting Officer Technical Representative (COTR): The FAA employee delegated to represent the CO in the technical monitoring of work accomplished under this contract.

Controlled Material: "For Official Use Only" material is normally unclassified information/documentation, which is to be protected against uncontrolled, unauthorized, or unwarranted release.

Quality Assurance: Those actions taken by the government to assure services meet the requirements of the performance work statement.

Quality Control: Those actions taken by a contractor to control the performance of services so that they meet the requirement of the performance work statement.

4. Applicable Orders, Studies, Regulations, Forms and Manuals:

REFERENCE DOCUMENTS: Access to FAA and Government documents required in the performance of this contract will be identified by tasks and made available by the FAA to the contractor upon request.

5. Period of Performance: August 16, 2009 through August 15, 2010, with four one-year option periods if exercised.

6. Place of Performance

Program Management, Operational Support Services, and administration may be provided off site at the contractors facilities or on site at the Mike Monroney Aeronautical Center (MMAC), Oklahoma City, OK. All other tasks will be performed at the contractor facilities or as specified in the task request.

6.1.1 FAA Normal Hours: Onsite performance should be conducted Monday through Friday, during the core hours of 0700 hours to 1700 hours CDT, for 8-hours (Except Federal holidays, or any other days designated by Federal Statute, Executive Order, or Presidential proclamation as a non-work day). The Contractor shall not perform services more than the hours available in a pay period unless specifically requested and approved by the CO prior to performance. Specific tasks may require deviations from the normal Monday through Friday 5-day workweek and may require less than a 40-hour workweek. The hourly rate for time worked in excess of 8 hours is the same as normal duty pay. Contract employees working more than 8 hours in one day will receive compensatory time off equal to the additional hours worked.

6.1.2 FAA closure: Adverse weather conditions, special memorial days, additional holiday hours, national emergencies and other circumstances may require CAMI and/or the Aeronautical Center to close. During such periods of closure the contractor will not be compensated. A list of the designated U.S. Federal holidays as of the date of this document is as follows:

New Year's Day
Martin Luther King, Jr. Birthday
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veterans Day
Thanksgiving Day
Christmas Day

7. GOVERNMENT RESPONSIBILITIES: When Contract personnel are hired to work at the Mike Monroney Aeronautical Center, the FAA will provide office space and equipment, access to FAA telephone systems for official government business, access to any automated data systems, word-processing, graphics and desktop publishing software required to complete operational and administrative task orders.
The FAA shall also provide all standard government forms, and limited printing and copying services.

The FAA will provide the contractor access to all Government documentation required in the performance of this contract. The government will also provide commercial documents peculiar to the performance of this contract.

8. CONTRACTOR RESPONSIBILITIES:
The contractor will provide qualified and trained personnel to perform the tasks ordered. The contractor is responsible for providing personnel with inoculations and medical examination/certification for employees whose duties involve the handling of biohazard materials or performing duties that require special medical consideration. This includes annual blood borne pathogen training and hazardous materials training.

9. SECURITY REQUIREMENTS: The contractor shall ensure that their employees observe and comply with all FAA/CAMI policies regulations and procedures concerning; fire, safety, environmental protection, sanitation, identification, security, traffic, parking, limited access areas, gratuities, and conduct. Contract employees working in government facilities shall be responsible for compliance with applicable building and physical security requirements. These requirements include, but are not limited to, the use of authorized

entrance and exit points, responsibility for securing doors, protecting government property from loss theft abuse or damage, and the use of telephones and computers for only mission related activities. The contractor shall be responsible for safeguarding all Government property issued for contractor use. Specific security requirements for tasked projects shall be identified in the Task Order.

9.1 Badges: The contractor shall be responsible for obtaining an FAA issued identification badge and car decal for each employee upon initial entry to the work site. While on FAA premises, each contractor shall wear their FAA identification (ID) badge at all times in accordance with FAA/MMAC current policies and directives. Further, the FAA reserves the right to direct the contractor to remove any employee who does not comply with the provisions of the contract.

10. PERFORMANCE:

10.1 Employment and Staffing: Descriptions of the various labor categories required under this contract are contained in Appendix A titled Contract Support Position Descriptions (CSPD). The CSPD document describes the general duties of each labor category, the minimum education and experience required for consideration for a position in the labor category under this contract, and a description of any FAA certification required for those positions.

Waiver of Experience/Education Requirements.

The stated minimum qualification for positions are intended to ensure candidates have sufficient knowledge, experience and technical skills to be recognized as an expert in the area being considered for assignment. This does not, however, ensure the individual will be suitable to perform in a manner consistent with FAA standards. Unique experience, professional reputation, publications or similar credentials may be accepted in lieu of the minimum education and experience required for each position. Determinations as to equivalency shall be made by the CO or COTR as part of the FAA's review of the candidate's qualifications.

10.2 Project Management and supervision: The contractor will designate a project manager who shall be the focal point responsible for delivery of products or services resulting from the performance of tasks, management and supervision of employees, coordination of tasked services, and contract administration. When required the FAA CO or designated Representative) may issue task request and specific requirements supporting AAM-600 research) by written correspondence. The Contract Project Manager shall be the focal point for Tasks ordered by the FAA. The Contract Project Manager is responsible for the supervision of Contract employees assigned to the tasks, and the Contract Project Manager must be available to provide status for tasked performance, and deliverables supporting AAM-600 when requested by the CO or designated Contracting Officers' Representative. Supervisory responsibilities may be designated to an onsite Contract employee. The Contract Project Manager shall be responsible for the submittal of monthly reports (with each invoice), contract management review, and resolution of performance issues (if required). The monthly report shall include the content defined by Contract Deliverable Requirement List (CDRL) (summary of tasks ordered, tasks status, identify problems (if any), resolution proposed, contract funds obligation and expenses) in Contractor Format. The Project Manager shall be responsible for attendance of Program Management Review to regularly scheduled (monthly, quarterly, or semi-annually) by mutual agreement between the CO and Contract Project Manager. The FAA AAM-600 requires approximately 2-3 hours of dedicated (on-site) Contract Project Manager support. The Project Manager shall meet the qualifications in Appendix A.

The FAA may request additional technical support services, and/or research services by task performance work statements. When research services are ordered, the Contractor will be responsible for developing research plans/protocols and schedules, developing applicable cost estimates for the project, managing the research project, identifying required reference documents, and developing associated reports and scientific documents. All documentation shall be developed using current automated technology that will provide easy retrieval, updating, and maintenance. The Program manager shall ensure the optimal performance and schedule of deliverables ordered by the FAA.

The Project Manager shall keep the FAA informed of all problems that impact or potentially impact performance and completion of Task Orders. For each problem encountered, a problem notification report containing proposed resolutions shall be submitted to the CO or COTR within 5 working days of problem identification. The Project Manager or his designated representative shall be available to attend meetings within 2-3 hours notice from the CO or COTR at the Mike Monroney Aeronautical Center (MMAC), 6500 South MacArthur Boulevard, Oklahoma City OK 73125, with the COTR.

10.3 Operational Support, Administration, and Reporting Services: The contractor will be responsible for management, supervision and assignment of personnel performing specific research tasks. The contractor shall establish and maintain proper controls to ensure the security of all FAA material. Those materials considered by the FAA to contain controlled, proprietary, Freedom of Information, or Privacy Act information shall be maintained in the manner prescribed by regulation and FAA procedures. The anticipated operational and administrative support is listed below:

Biological Laboratory Technician
Biological Laboratory Technologist
Engineering Technician
Data Analyst
Technical Research Professional/Project Manager

10.4 Task Orders: The required services shall be conducted by task order. The task orders shall be coordinated with the project manager to obtain the proposed assignment, delivery or completion date, and estimated costs. The response to the task order should be received by the CO or designated COTR within 5 working days. Detailed position descriptions and required qualifications for contractor personnel are provided in Appendix A - Contract Support Position Descriptions. The FAA reserves the right to review resumes of all personnel and/or medical certificates or training dates for personnel handling biohazard materials or assigned to duties that require special medical consideration. This includes annual training required for blood borne pathogen training.

All documentation, including records, schedules, charts, drafts, diagrams, etc., developed or purchased buy the contractor in the performance of this contract, become the property of the FAA. The contractor shall keep such items current and in a logical orderly manner. Such documentation and records shall be submitted to the FAA at the time of completion or termination of the contract.

10.5 Minimum Experience/Education Requirements.
All personnel employed in support of this contract are expected to meet any specified minimum experience and/or education requirements for their respective position, as of the date of their appointment. Such minimums are specified in Appendix A - Contract Support Position Descriptions. When submitting the proposed approach to the task order, the contractor must provide employee experience (e.g., application, resume, etc.) for all assigned personnel. The FAA reserves the right to review and approve resumes of

potential new hires prior to the contractor making a job offer to a new applicant. Only under emergency circumstances may the contractor obtain verbal approval from the CO to hire new employees. Further, the FAA reserves the right to direct the contractor to remove any employee who is not performing in accordance with the contract or who the FAA finds unacceptable for other reasons. The CO or COTR will identify to the program manager any qualifications requiring verification or validation. The FAA CO further reserves the right to deny the appointment of any candidate found to be lacking any of the stated minimums for the task.

10.6 Travel: When required Travel will be requested by the FAA in advance, and authorized in writing by the CO or COTR prior to initiating travel requirements. The FAA will reimburse travel costs in accordance with Federal Travel Regulations issued by the General Services Administration (GSA) and provisions of the contract.

10.7 Employee Training: The contractor will furnish fully trained personnel. When advantageous to the Government, additional government funded training may be provided to contract personnel at no cost to the contractor.

10.8 Reports: When required the contractor shall submit written status reports on the 10th of each month to the CO and COTR. The status reports shall include the following:

All work in progress and the resources applied to each activity.
A description of progress made in the previous month, (quantitative description where applicable).
A summary of costs incurred, and projected for the next 30 days.
Identification of any problems which may impede performance and/or the completion.
Identification of the proposed corrective action

10.9 Quality Control: The contractor is responsible for developing a quality control plan to assure that the products/services provided meet the standards defined in the task order. The contractor shall establish quality control metrics that will verify the work is being accomplished according to the task order.

11. Quality Assurance:

The Government shall be responsible for evaluating the performance of the contractor to ensure compliance with prevailing laws, regulations, provisions, and policies, under the contract and each task order. The project manager is required to meet, at the discretion of the CO or COTR, with the CO or COTR at anytime during the term of the contract. When an observation indicates unsatisfactory performance, the FAA CO or COTR will meet with the project manager to resolve documented deficiencies in performance.

Appendix A
Contract Support Position Descriptions

Technical Research Professional/Project Manager : Requires a professional technical expert with specialized educational qualifications and a combined level of technical experience performing complex high-level biomedical research activities defined in the Statement of Work. The qualified candidate is a recognized subject-matter expert in the medical or bio-medical field and provides leadership for highly complex and challenging activities with minimal managerial supervision. As project manager the professional shall have full authority to monitor the work assignments of contract personnel assigned to AAM-600 tasks, and to act for the contractor on all matters relating to the accomplishment of activities and supervision of employees cited herein. The Project Manager shall be the focal point responsible for delivery of products or services resulting from the performance of tasks, management and supervision of employees, coordination of tasked services, and contract administration. This position may involve planning, research, development, design, test, evaluation and analysis of medical or bio-medical issues. Duties often include conducting research, performing data analysis, and providing professional consulting services. The work may require the application of scientific and biomedical principles to study aviation related safety issues. The designated project manager shall also name at least one alternate with full authority to serve in (his/her) absence. Duties may also include:

- Personnel actions (e.g., hiring, firing, performance review, conduct and discipline, scheduling leave and arranging work schedules) involving contract personnel to ensure the competent and timely performance of all tasks described in this statement of work.
- Writing reports, making recommendations and delivering reports, briefings and presentations to AAM-600, other technical groups or organizations.
- Conducting feasibility studies, provide technical guidance and advice, and perform conference reviews, audits, and evaluations.
- Serving as a task leader on important complex time sensitive activities
- Working independently on an assigned project/task with little or no technical direction.

Education: Masters Degree or higher from an accredited university in a medical or biomedical sciences related field. An advanced degree (Ph.D. or equivalent) in a related technical scientific field may be substituted for 2 years relevant work experience.

Certification: Not required.

Experience: minimum of six (6) years experience performing work related to research and data analysis.

****

Healthcare Professional: The Office of Aviation Medicine sponsors research addressing (1) in-flight medical incapacitation and impairments, (2) in-flight medical emergencies, (3) fatal aircraft accidents, (4) special issuance pilot mishaps, (5) defibrillator utilization (Aviation Medical Assistance Act), and (6) in-flight medical events. The Aircraft Accident Research Team (AART) maintains databases related to in flight medical issues.

Works closely with AART physicians and related personnel to review and code medical data for entry into the related AART databases (primarily defibrillator utilization and autopsy databases). Data review will include analysis of information obtained related to the relevant database, with a subsequent coding for entry

into the database. May also assist physicians with analysis and review of data in preparation for presentations and reports.

Education: Requires Postgraduate medical training such as a physician assistant or nurse practitioner is required.
Certification: Not required.
Experience: Minimum of 2 years working in a medical related field.

****

Research Chemist: Requires knowledge in the use and interpretation of a full range of techniques, procedures, and methods applied to assess the harmful effects of chemical compounds and substances on biological systems. Also requires knowledge of the methods used to detect and evaluate the nature of chemical induced changes in function and structure as well as the significance of certain effects on living cells. Performs standard procedures to ensure specimens are properly extracted and amenable to formal analytical testing. Prepares reagents using prescribed laboratory standards and biochemical toxicological procedures. Performs repetitive but complex procedures in the analysis of biological specimens including the operation of the following instruments: Gas Chromatography, Mass Spectrometry, High Performance Liquid Chromatography, Fluorescence Polarization Immuno Assay, Gamma Counter, UV Spectrophotometer, Enzyme Immuno Assay, and other related instrumentation. Performs statistical analysis of data collected from the above instrumentation. Records and verifies test results on paper and in computerized searchable format. Maintains accurate laboratory notes in accordance with standard protocols and procedures. Reports the results to the COTR. Maintains work area at high level of cleanliness. Performs independent unsupervised research in method development and drug identification.

Education: B.S. degree in Chemistry, Forensic Science, Microbiology, or related field. An advanced degree in Chemistry or related field will require less experience.
Certification: Not required
Experience: 4-6 years related experience with a B.S. degree, or an advanced degree in a chemistry related field. Requirement is 2-3 years experience with Graduate degree.

****

Data Analyst: Responsible for independently collecting, entering and analyzing medical and aviation safety data in computerized databases. Produces reports and other supporting documentation for reports and presentations on the associated research programs. Must be familiar with the medical data and coding, understand inconsistencies and ambiguities in the data, and independently resolve these data problems. Participates in the design and modification of databases by defining data elements, inter relationships, and overall structure. While not expected to be involved in programming or other software development associated with data bases, may make minor modifications to the software to establish needed analytical capabilities. Independently research cases and entries in data bases in order to collect information needed, including identifying and utilizing data sources previously not available, under the direction of the COTR (or other designated government research personnel). May supervise other contractor personnel involved with the creation and maintenance of the data resources.

Education: BS degree in a life sciences field or 5 five years experience with aeromedical terminology, case review, medical database management software, medical data entry and retrieval, and medical terminology. Work experience should include a working knowledge of hospital and AMCD recordkeeping and NTSB accident data collection practices.

Certification: Not Required
Experience: Work experience demonstrating programming knowledge and proficiency in multi media, Access or Oracle.

Biological Science Laboratory Technologist: Requires knowledge in the use and interpretation of a full range of techniques, procedures, and methods applied to assess the harmful effects of chemical compounds and substances on biological systems. Also requires knowledge of the methods used to detect and evaluate the nature of chemical induced changes in function and structure as well as the significance of certain effects on living cells. Performs standard procedures to ensure specimens are properly extracted and amenable to formal analytical testing. Prepares reagents using prescribed laboratory standards and the Forensic Toxicology Research Teams procedures. Performs repetitive but complex procedures in the analysis of biological specimens including the operation of the following instruments: Gas Chromatography, Mass Spectrometry, High Performance Liquid Chromatography, Fluorescence Polarization Immuno Assay, Gamma Counter, UV Spectrophotometer, Enzyme Immuno Assay, and other related instrumentation. Records and verifies test results in a notebook and in a computerized searchable format. Maintains accurate laboratory notes in accordance with standard Forensic Toxicology Research protocols and procedures. Reports test results to the COTR. Maintains work area at high level of cleanliness. May also be required to perform directed research, with extensive oversight, in method development and drug identification.

Education: B.S. degree in Chemistry, Forensic Science, Biological Science or related field. Advanced degree in chemistry or related field may be substituted for direct work experience.
Certification: Not required.
Experience: 2-3 years experience related to the Education Requirements.

****

Biostatistician: Responsible for oversight of statistical methodology and quality in bio-aeronautical/aerospace medicine and other health-related research protocols using advanced mathematical statistics, sampling theory, experimental design, and computer applications. Provides professional expertise and support in the areas of study design, data extraction, and implementation of analysis and design plans to ensure that protocols meet study objectives, are statistically valid and cost efficient, and provide valuable interpretations. Performs advanced and innovative statistical analyses, interpretation, and presentation of complex data. Experience with one or more statistical software packages (including SPSS) for manipulation and analysis of data sets. Develops new methods for analyzing data for which existing techniques are unavailable or inappropriate. Composes training methods and materials, such as curricula, lectures, videos, brochures and handbooks. Collaborates on Office of Aerospace Medicine reports. Participates in workshops, colloquia, and presentations. Requires excellent oral and written communication skills, strong statistical and computer skills.

Education: PhD degree in Statistics with 2-3 years related industry experience. Strong background in biology/biochemistry, medical or health sciences required.
Certification: Not required.
Experience: 2-3 years related industry experience.

****

Industrial Hygienist/Environmental Health Specialist: Manage, supervise, lead, or perform professional work that involves recognizing, identifying and evaluating conditions in aircraft cabin, which may adversely affect the health and safety of flight deck and cabin crew, passengers, and the environment; formulate and recommend measures to control or eliminate potential health and safety hazards; develop research and environmental compliance programs to meet applicable federal requirements. Conduct extensive literature review to support development of Cabin Air Quality R&D plan. Develop concepts in research initiatives and detailed research protocols to meet congressional requirements in Cabin Air Quality. Investigate, evaluate, provide information on sanitation practices, techniques, and methods for the purpose of identifying, preventing, and eliminating environmental health and safety hazards. Study functional statements, organization charts, and project information to determine functions and responsibilities. Study sequence of operations to be performed and flow of business and materials. Assist in development of work statements for contract R&D of research programs, sensors, and surveillance systems. Confer with management and research staff to implement plans and recommendations. Advise FAA management and research staff on methods to conduct air samplings, identify contaminants and contaminant characteristics, and methods to categorize, organize and archive records and samples.

Must be able to: Apply principles of logical or scientific thinking to define problems, collect data, establish facts, and draw valid conclusions. Interpret an extensive variety of technical instructions in mathematical or diagrammatic form. Deal with several abstract and concrete variables.

Algebra: Work with exponents and logarithms, linear equations, quadratic equations, mathematical induction and binomial theorem, and permutations.
Statistics: Apply mathematical operations to frequency distributions, reliability and validity of tests, normal curve, analysis of variance, correlation techniques, chi-square application and sampling theory, and factor analysis.
Reading: Read literature, books, scientific and technical journals, abstracts, financial reports, and legal documents.
Writing: Write reports, editorials, journals, speeches, manuals, and critiques.
Speaking: Conversant in the theory, principles, and methods of effective and persuasive speaking, voice and diction, phonetics and discussion and debate.

Education: Requires a Master's degree in Industrial Hygiene, Environmental Management, or related course of study (Bachelor's degree and equivalent experience may be considered).
Certification: Not required.
Experience: Requires practical knowledge of basic environmental health concepts, principles, methods, and techniques, including survey and inspection techniques, measurement technology, and control and eradication methods; knowledge of chem/bio-terrorism tactics, prevention, and resolutions. Requires knowledge of contaminants (e.g., radiation, noise, chemical and biological agents), ventilation, air sampling (computer model and actual), environmental and occupational toxicology, statistics, and risk communication. Requires experience in aviation or indoor air quality with knowledge of regulations and congressional mandates regarding environmental air quality. Requires knowledge of management systems development for cost analysis, financial planning, wage and salary administration, and job evaluation, government requisition and contracting procedures.

****

Aircraft Mechanic: Required to fabricate and modify experimental equipment in preparation for research studies. Work may include removal of components and equipment in existing simulators and fabrication, modification, and installation of new equipment, components, and scientific equipment used in experimental research. Also responsible for removing and installing aircraft equipment, parts, and systems from large

transport category aircraft that may be needed to conduct future research studies. Need not be a certificated FAA mechanic with an airframe and power plant rating, but all work will be performed using aviation maintenance techniques, tools and equipment. Directs and coordinates the work of other support aircraft technician helpers.

Education: Completion of an accredited aircraft mechanic curriculum.
Certification: Airframe and Power Plant (A&P) license.
Experience: Five years of experience in building equipment maintenance, wiring, circuitry, equipment installation, materials fabrication and purchasing as well as proficiency in the use of most power hand tools and equipment used in the building industry is required.

****

Engineering Technician: Responsible for the installation of new equipment, components, and scientific equipment used in experimental research. Fabricates and modifies experimental equipment in preparation for research studies. Work may include removal of components and equipment in existing simulators and fabrication, modification, and installation of scientific equipment and components used in research initiatives. The engineering technician is responsible for removing and installing aircraft equipment, parts, and systems from large transport category aircraft that may be needed to support future research studies. The technician is an integral part of the Aerospace Medical Research Division and may be given tasks to support other research initiatives or projects that are outside of the primary technician duties. The technician is expected to have a basic understanding of wiring diagrams, commercial wiring codes, HVAC systems, and basic construction principles.
All work requires standard maintenance, fabrication, construction, and installation techniques.

Education: 2 yr engineering technician degree or demonstrated work experience.
Certification: Not required
Experience: Two years working in a related field such as, commercial building maintenance, fabrication, commercial construction, metal fabrication or as a commercial electrician.

****

Biological Science Laboratory Technician: Requires the application of scientific knowledge in areas including, but not limited to, pathology, anatomy, chemistry, biochemistry, microbiology, physiology, pharmacology, toxicology, and materials sciences. Performs procedures to ensure specimens are properly processed, accessioned, and extracted, and are amenable to formal analytical testing. Prepares reagents and solutions using prescribed laboratory standards and procedures. Performs complex procedures in the analysis of biological specimens. Assists in preparing and releasing analytical batches, and in maintaining analytical data and records. Operates the following instruments: Gas Chromatography, Mass Spectrometry, High Performance Liquid Chromatography, Fluorescence Polarization Immunoassay, Gamma Counter, UV Spectrophotometer, Enzyme Immunoassay, and other related instrumentation. Detects and measures drugs, alcohol, toxic gases, and toxic industrial chemicals in victims of fatal accidents and assists in reporting those findings to the National Transportation Safety Board (NTSB). Maintains work area at high level of cleanliness. Participates in writing research papers. Performs work following Quality Assurance/Quality Control (QA/QC) standards and other duties as assigned. Maintains accurate laboratory notes in accordance with standard protocols and procedures. Studies the conditions that affect the accuracy and validity of measurements and adapts or develops improved methods for making such measurements. Processes the data

and reports the results to the COTR. Assists in establishing and evaluating criteria for determining compliance with air transportation industry standards and for certification of aircraft safety requirements. Studies medical findings in aircraft accidents and defines relationships between those findings and the safe operation of aircraft. All work closely reviewed by supervisory research chemists.

The critical nature of this work dictates that only highly qualified aviation technical personnel that are current with state-of-the-art technology be utilized. Clinical chemical measurements are made and analyzed to determine significant health trends in aviation personnel, and analytical service is furnished in support of other Civil Aerospace Medical Institute tasks when required. DNA / RNA analyses are undertaken to both specifically identify tissue sources and to document biochemical processes such as postmortem alcohol generations. The nature of the work to be accomplished is critical to aviation safety. The results of investigations and analysis can result in significant improvements in cabin safety for the air transportation industry.

Education: 2 years of education in a chemistry related field
Certification: Not Required
Experience: 2 years direct experience working a laboratory performing similar work may substitute for Education requirements.

****

Computer Programmer Level II: (Programming tasks will be accomplished in Aeromedical Research Division.) Office of Aviation Medicine conducts research on (1) in-flight medical incapacitations and impairments, (2) in-flight medical emergencies, (3) fatal aircraft accidents, (4) special issuance pilot mishaps, (5) defibrillator utilization (Aviation Medical Assistance Act), and (6) dynamic impact tests. Requires data entry, retrieval and management skills, Microsoft Access, Visual Basic, and Oracle programming. Develops user-friendly Microsoft Access-based data entry screens that include record-by-record data validation, report generating modules that create tabular statistical reports and narrative summaries. Establishes compatibility of newly integrated data fields and quality assurance queries to test consistency of the data. Must be able to expeditiously input information from a typical incapacitation or impairment, in-flight medical emergency, fatal aircraft accident, special issuance pilot mishap, defibrillator utilization, or dynamic impact test into a database. Statistical requirements: basic descriptives (including means, medians, standard deviations, frequencies), correlations and independence tests (e.g., chi-square) of aircraft, accident location, and medical data, etc. using data management approaches that permit transferring the data into standard software for assessment of statistical significance. Narrative summary modules should permit tabulation of all signs and symptoms associated with incapacitations and impairments, or in-flight medical emergencies. Injury patterns and causes associated with fatal aircraft accidents, pilot and accident parameters in special issuance pilot mishaps, defibrillator utilization, g-force parameters and other test conditions involved in dynamic impact tests also required.

Education: BS degree in computer science
Certification: Not Required
Experience: Work experience demonstrating programming knowledge and proficiency in multi media, Access or Oracle.

****

Data Technician: Enters data related to medical and aircraft safety research into established data bases, and produces reports used by government research personnel in presentations and programs, including audio-

visual presentations, slides and graphs generated with Microsoft PowerPoint or Excel. Data entry in Oracle or Microsoft Access. Expected to understand all of the data elements necessary for a data record, and to collect this information from other research personnel for entry. Not expected to understand the content of the data, nor to recognize inconsistencies in the data unless this data quality control has been explicitly detailed by the COTR.

Education: 2 yr degree in computer related field or demonstrated work experience.
Certification: Not Required
Experience: Must have a minimum of 1 year of experience using MS Office products, databases, or other relevant computer programs and possess sufficient keyboarding data entry skills.

****

Mathematical Technician: Responsible for the compilation of data and preparation of draft material and final form technical documents. Must be familiar with technical terminology associated with the documentation initiated and the use of electronic media. Must be capable of writing technical narratives and analyzing statistical data. Typical activities include, but are not limited to:

1. Collection of data from experiments conducted, including the scoring of psychological profile questionnaires and review of data collection from motion picture and video recordings of experiments.
2. Assembling data into an electronic form needed to perform computerized analysis of the data.
3. Performing data preparation and statistical analyses specified by the Protection and Survival laboratory staff member responsible for a project, using SPSS software running on a government-provided computer.
4. Create visual material (such as graphs, tables, overhead slides, and figures) for scientific presentations, reports and program briefing materials concerning the evacuation experiments.

Education: BS degree with a minimum of 9 credit hours in research statistics, computer applications, and research design.
Certification: Not required.
Experience: Equivalent analytical work experience demonstrating statistical mathematical proficiency may be substituted for Education.
****

Research Subjects: The Civil Aerospace Medical Institute (CAMI) of the Federal Aviation Administration (FAA) conducts research on human function and performance in the civil aviation environment. As part of this research, people are needed as human test subjects. In addition, people with specific skills are needed on an irregular basis to assist in the conduct of a test. This indefinite quantity agreement will provide CAMI with human test subjects and other personnel needed for research. Prior to recruiting subjects, all protocols using human subjects are reviewed by an Institutional Review Board (IRB) at CAMI in compliance with the model federal policy on the use of human test subjects as adopted by the Department of Transportation, August, 1991. The IRB review ensures that the testing is necessary, and that the experimental protocols will be performed in a safe, ethical manner. Prior to the start of a research study CAMI will provide the contractor with an IRB approved copy of the research protocol. Typically the protocol is an attachment to the research subject delivery order.

Education To be determined by the research project.
Certification: To be determined by the research project.
Experience: To be determined by the research project.

****

Water Survival Training Specialist: Is a recognized authority in organizing, evaluating, developing, and implementing a variety of water safety and survival programs. Must have demonstrated the ability to extract information from government agencies and private industry concerning water safety and survival training. Must be capable of preparing written reports of the analyses of the collected data. Has a reasonable knowledge of the mechanisms involved with hypothermia.

Education: BS degree
Certification: Not required
Experience: 5 years experience in related water safety and survival training may substitute for Education requirements.

****

Life Guard: Duties are primarily limited to monitoring subjects participating in water research activities or water survival training activities.

Education: Not Required
Certification: Current valid Red Cross or equivalent certification is required.
Experience: Training in surveillance to help recognize and prevent injuries, water rescue skills, first aid, and professional rescuer CPR is also necessary.